

Docket No.: 25436/2412 Serial No.: 10/815,337

SEQUENCE LISTING

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Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr

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Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile 50 55 60

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro 65 70 75 80

Glu Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val 85 90 95

Tyr Glu Arg Thr Leu Arg Phe Glu Asp Gly Gly Leu Val Glu Ile Arg 100 105 110

Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr 115 120 125

Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile 130 135 140

Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160 Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe 165 Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 185 Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr 195 200 Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln 215 Leu Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val 230 225 <210> 19 <211> 720 <212> DNA Renilla reniformis <213> <400> 19 atggtgagca agcagatect gaagaacace ggeetgeagg agateatgag etteaaggtg 60 120 aacctggagg gcgtggtgaa caaccacgtg ttcaccatgg agggctgcgg caagggcaac atcetgttcg gcaaccaget ggtgcagate cgcgtgacca agggcgcccc cetgccette 180 240 gccttcgaca tcctgagccc cgccttccag tacggcaacc gcaccttcac caagtacccc 300 gaggacatca gcgacttctt catccagagc ttccccgccg gcttcgtgta cgagcgcacc 360 ctqcqctacq aqqacqqcqq cctqgtgqag atccgcagcg acatcaacct gatcgagggg atqttcqtqt accqcqtqqa qtacaaqqqc cqcaacttcc ccaacqacqg ccccgtgatg 420 aaqaaqacca tcaccqqcct qcaqcccagc ttcgaqgtgg tgtacatgaa cgacggcgtg 480 540 ctggtgggcc aggtgatcct ggtgtaccgc ctgaacagcg gcaagttcta cagctgccac atgcgcaccc tgatgaagag caagggcgtg gtgaaggact tccccgagta ccacttcatc 600 cagcaccgcc tggagaagac ctacgtggag gacggcgct tcgtggagca gcacgagacc 660 720 gccatcgccc agctgaccag cctgggcaag ccctgggca gcctgcacga gtgggtgtaa <210> 20 <211> 239 <212> PRT Renilla reniformis <213> <400> 20 Met Val Ser Lys Gln Ile Leu Lys Asn Thr Gly Leu Gln Glu Ile Met Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr

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Leu 65	Ser	Pro	Ala	Phe	Gln 70	Tyr	Gly	Asn	Arg	Thr 75	Phe	Thr	Lys	Tyr	Pro 80		
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Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Ser Gly Asn Gln Leu Val 35 40 45

Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile 50 55 60

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro 65 70 75 80

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Tyr Glu Arg Thr Leu Arg Phe Glu Asp Gly Gly Leu Val Glu Ile Arg 100 105 110

Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Glu Tyr Arg Val Glu Tyr 115 120 125

Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile 130 135 140

Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160

Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe 165 170 175

Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 180 185 190

Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr

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200

Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln

195

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro 65 70 75 80	
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Tyr Glu Arg Thr Leu Arg Phe Glu Asp Gly Gly Leu Val Glu Ile Arg 100 105 110	
Ser Asp Ile Asn Leu Ile Glu Glu Met Phe Glu Tyr Arg Val Glu Tyr 115 120 125	
Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile 130 135 140	
Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160	
Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe 165 170 175	
Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 180 185 190	
Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr 195 200 205	
Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln 210 215 220	
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Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val 35 40 45														
Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile 50 55 60														
Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro 75 80														
Glu Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val 85 90 95														
Tyr Glu Arg Thr Leu Arg Phe Glu Asp Gly Gly Leu Val Glu Ile Arg 100 105 110														
Ser Asp Ile Asn Leu Ile Glu Gly Met Phe Val Tyr Arg Val Glu Tyr 115 120 125														
Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Asn Thr Ile 130 135 140														
Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160														
Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe 165 170 175														
Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 180 185 190														
Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Ala Tyr 195 200 205														
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Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile
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Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro
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60

120

180

240

300

360

420

480

540

600

660

720

90

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Tyr Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Ala Glu Ile Arg

Ser Asp Ile Asn Leu Ile Glu Gly Met Phe Val Tyr Arg Val Glu Tyr 115 120 125											
Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Asn Thr Ile 130 135 140											
Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160											
Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe 165 170 175											
Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 180 185 190											
Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr 195 200 205											
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Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val

Gln Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile 50 55 60

Leu Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro 65 70 75 80

Glu Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val 85 90 95

Tyr Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg 100 105 110

Ser Asp Ile Asn Leu Ile Glu Gly Met Phe Val Tyr Arg Val Glu Tyr 115 120 125

Lys Gly Arg Asn Phe Pro Asn Asp Gly Pro Val Met Lys Asn Thr Ile 130 135 140

Thr Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val 145 150 155 160

Leu Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Cys Gly Lys Phe 165 170 175

Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys 180 185 190

Asp Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr 195 200 205

Val Glu Asp Gly Gly Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln 210 215 220

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Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val Gln 35 40 45

Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Leu 50 55 60

Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu 65 70 75 80

Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val Tyr 85 90 95

Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg Ser 100 105 110

Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr Lys 115 120 125

Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile Thr 130 135 140 Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val Leu 145 Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe Tyr Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp 185 Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val Glu Asp Gly Gly Phe Val Glu Glu His Glu Thr Ala Ile Ala Gln Leu 215 Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val 230 <210> 33 <211> 714 <212> DNA Renilla reniformis <213> <400> 33 atqaqtaaac aaatattqaa gaacactqga ttgcaggaga tcatgtcgtt taaagtgaat 60 120 ctggaaggtg tagtaaacaa tcatgtgttc acaatggaag gttgtggaaa aggaaatatt ttattaggaa accaactggt tcagattcgt gtcacaaaag gggctccgct tccatttgca 180 tttgatattc tctcaccagc tttccaatac ggcaaccgta cattcacgaa atacccggag 240 qatatatcaq actitittat acaatcatti ccagcgggat tigtatacga aagaacgitg 300 360 cqttacqaaq atqqtqqact qqttqaaatc cqttcagata taaatttaat cqaggagatg 420 tttgtctaca gagtggaata taaaggtagt aacttcccga atgatggtcc agtgatgaag aagacaatca caggattaca accttcgttc gaagttgtgt atatgaacga tggcgtcttg 480 gttggccaag tcattcttgt ttatagatta aactctggca aattttattc gtgtcacatg 540 agaacactga tgaaatcaaa gggtgtagtg aaggattttc ccgaatacca tttcattcaa 600 catcgtttag agaagacgta tgtggaagac ggaggttttg ttgaggaaca cgagacggcc 660 attgctcaac tgacatcgct ggggaaacca cttggatcct tacacgaatg ggtt 714 <210> <211> 238 <212> PRT <213> Renilla reniformis

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Asp	Ile	Asn 115	Leu	Ile	Glu	Glu	Met 120	Phe	Val	Tyr	Arg	Val 125	Glu	Tyr	Lys		
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Val	Gly	Gln	Val	Ile 165	Leu	Val	Tyr	Arg	Leu 170	Asn	Ser	Gly	Lys	Phe 175	Tyr		
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Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu 65 70 75 80

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Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg Ser 100 105 110

Asp Ile Asn Leu Ile Glu Gly Met Phe Val Tyr Arg Val Glu Tyr Lys 115 120 125

Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile Thr 130 135 140

Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val Leu 145 150 155 160

Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe Tyr 165 170 175 Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp 185 180 Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val 200 Glu Asp Gly Gly Phe Val Glu Glu His Glu Thr Ala Ile Ala Gln Leu 210 215 Thr Ser Leu Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val 230 <210> 37 714 <211> <212> DNA <213> Renilla reniformis <400> 37 atgagtaaac aaatattgaa gaacactgga ttgcaggaga tcatgtcgtt taaaqtqaat 60 ctggaaggtg tagtaaacaa tcatgtgttc acaatggaag gttgtggaaa aggaaatatt 120 ttattcqqaa accaactqqt tcaqattcqt qtcacaaaaq gggctccgct tccatttgca 180 tttgatattc tctcaccagc tttccaatac ggcaaccgta cattcacgaa atacccggag 240 gatatatcag actttttat acaatcattt ccagcgggat ttgtatacga aagaacgatg 300 cgttacgaag atggtggact ggttgaaatc cgttcagata taaatttaat cgaggagatg 360 tttgtctaca gagtggaata taaaggtagt aacttcccga atgatggtcc agtgatgaag 420 aaqacaatca caqqattaca accttcqttc qaaqttqtqt atatqaacqa tqqcqtcttq 480 gttggccaag tcattcttgt ttatagatta aactctggca aattttattc gtgtcacatg 540 agaacactga tgaaatcaaa gggtgtagtg aaggattttc ccgaatacca tttcattcaa 600 catcgtttag agaagacgta tgtggaagac ggaggttttg ttgaggaaca cgagacggcc 660 attgctcaac tgacatcgct ggggaaacca cttggatcct tacacgaatg ggtt 714 <210> 38 <211> 238 <212> PRT <213> Renilla reniformis <400> 38 Met Ser Lys Gln Ile Leu Lys Asn Thr Gly Leu Gln Glu Ile Met Ser Phe Lys Val Asn Leu Glu Gly Val Val Asn Asn His Val Phe Thr Met Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val Gln

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Asp	Ile	Ser	Asp	Phe 85	Phe	Ile	Gln	Ser	Phe 90	Pro	Ala	Gly	Phe	Val 95	Tyr	
Glu	Arg	Thr	Met 100	Arg	Tyr	Glu	Asp	Gly 105	Gly	Leu	Val	Glu	Ile 110	Arg	Ser	
Asp	Ile	Asn 115	Leu	Ile	Glu	Glu	Met 120	Phe	Val	Tyr	Arg	Val 125	Glu	Tyr	Lys	
Gly	Ser 130	Asn	Phe	Pro	Asn	Asp 135	Gly	Pro	Val	Met	Lys 140	Lys	Thr	Ile	Thr	
Gly 145	Leu	Gln	Pro	Ser	Phe 150	Glu	Val	Val	Tyr	Met 155	Asn	Asp	Gly	Val	Leu 160	
Val	Gly	Gln	Val	Ile 165	Leu	Val	Tyr	Arg	Leu 170	Asn	Ser	Gly	Lys	Phe 175	Tyr	
Ser	Cys	His	Met 180	Arg	Thr	Leu	Met	Lys 185	Ser	Lys	Gly	Val	Val 190	Lys	Asp	
Phe	Pro	Glu 195	Tyr	His	Phe	Ile	Gln 200	His	Arg	Leu	Glu	Lys 205	Thr	Tyr	Val	
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ttt	gata	ttc	tctc	acca	gc t	ttcc	aata	c gg	caac	cgta	cat	tcac	gaa	atac	ccggag	240
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Glu Gly Cys Gly Lys Gly Asn Ile Leu Ser Gly Asn Gln Leu Val Gln 35 40 45

Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Leu 50 55 60

Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu 65 70 75 80

Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val Tyr 85 90 95

Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg Ser 100 105 110

Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr Lys 115 120 125

Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Lys Thr Ile Thr 130 135 140

Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val Leu 145 150 155 160

Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe Tyr 165 170 175

Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp 180 185 190

Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val 195 200 205

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75

Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Leu

Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu

70

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Gly	Ser 130	Asn	Phe	Pro	Asn	Asp 135	Gly	Pro	Val	Met	Lys 140	Lys	Thr	Ile	Thr		
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Ser	Cys	His	Met 180	Arg	Thr	Leu	Met	Lys 185	Ser	Lys	Gly	Val	Val 190	Lys	Asp		
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- Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Leu 50 55 60
- Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu 65 70 75 80
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- Glu Arg Thr Leu Arg Tyr Glu Asp Gly Gly Leu Val Glu Ile Arg Ser 100 105 110
- Asp Ile Asn Leu Ile Glu Gly Met Phe Val Tyr Arg Val Glu Tyr Lys 115 120 125
- Gly Ser Asn Phe Pro Asn Asp Gly Pro Val Met Lys Asn Thr Ile Thr 130 135 140
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- Val Gly Gln Val Ile Leu Val Tyr Arg Leu Asn Ser Gly Lys Phe Tyr 165 170 175
- Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp 180 185 190
- Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val 195 200 205
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- Glu Gly Cys Gly Lys Gly Asn Ile Leu Phe Gly Asn Gln Leu Val Gln 35 40 45
- Ile Arg Val Thr Lys Gly Ala Pro Leu Pro Phe Ala Phe Asp Ile Leu 50 55 60
- Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu 70 , 75 80
- Asp Ile Ser Asp Phe Phe Ile Gln Ser Phe Pro Ala Gly Phe Val Tyr
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- Glu Arg Thr Leu Arg Phe Glu Asp Gly Gly Leu Val Glu Ile Arg Ser 100 105 110
- Asp Ile Asn Leu Ile Glu Glu Met Phe Val Tyr Arg Val Glu Tyr Lys

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PRT

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Asp	Ile	Asn 115	Leu	Ile	Glu	Glu	Met 120	Phe	Val	Tyr	Arg	Val 125	Glu	Tyr	Lys
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Ser Pro Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Glu 65 70 75 80

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Asp Ile Asn Leu Ile Glu Gly Met Phe Val Tyr Arg Val Glu Tyr Lys 115 120 125

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Gly Leu Gln Pro Ser Phe Glu Val Val Tyr Met Asn Asp Gly Val Leu 145 150 155 160

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Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp 180 185 190
Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val 195 200 205
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Ser Cys His Met Arg Thr Leu Met Lys Ser Lys Gly Val Val Lys Asp 180 185 190	
Phe Pro Glu Tyr His Phe Ile Gln His Arg Leu Glu Lys Thr Tyr Val 195 200 205	
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235

225

230

90

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Mammalian Expression Vectors

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